

having first been pushed in, keeps the slant from drying out for weeks at incubator temperature and indefinitely at room temperature. It is equally efficient in keeping the volume of a broth tube or flask unchanged. The advantage over wax or paraffin is that the seal is readily stripped off and the cotton plug remains perfectly manageable. An inch-wide strip carried around the cover of a Petri dish and pressed down on the bottom of the dish allows prolonged incubation of a plate culture. Poured plates thus sealed are stacked for storage with waxed paper between to keep them from sticking together. The security of the seal may be seen in the following experiment: (1) 10 cc of alcohol in a graduated centrifuge tube lost nothing in volume in four days, during which time the same quantity in a cotton-stoppered tube, both in the 37° incubator, went down to 7 cc; (2) a tube of water at 54° kept the level unchanged for nine days, during which time the control went down an inch.

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### DECLIVITY MAPS

GEOGRAPHERS are not alone in finding maps to indicate the degree of slope for a given land surface extremely useful. These maps are not common; and hence many researchers have gone to the field for this information. This procedure is unnecessary when large scale topographic maps with a small contour interval are available. Therefore, this brief paper deals with a method of gathering the essentials requisite for the construction of declivity maps from topographic maps.

The two essential data used in determining slope information are included in topographic maps. If one is to inspect below the diagrammatic, vertical section of a hill, prepared to illustrate certain features in the construction of a topographic map, it is obvious that the requisite information for the declivity map is available.

If one wishes to determine the slope of the land between A and C, it may be calculated by solving for angle BCA, whose tangent is calculated by the distance AB as 50 feet (contour interval) and BC as 75 feet (by measure). In like manner the angles of DEC, GFH and IHJ may be ascertained. It follows then that these angles are the respective slope angles along the line XX'. To secure slopes elsewhere on the map, one has only to measure the distance between contours and substitute this formation with the contour interval, as indicated in the above method.

Place the computed angles mid-way between the contours where the slope has been determined. When

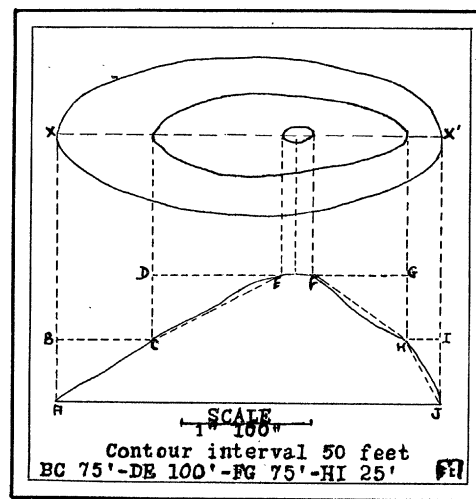


FIG. 1

the slope information has been recorded, generalize this information by the conventional isopleths, so familiar to geographers.

The number of observations will be governed by the degree of detail necessary for a given problem. Like all isoplethic maps, generally speaking, the greater the number of observations used for the map, the more faithful the map is to the truth.

It is suggested that a table be prepared with slope angles indicated as equivalents of the data discussed. The number of items necessary for a table will be governed, of course, by the degree of detail desired.

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### BOOKS RECEIVED

- DICKINSON, H. W. *Matthew Boulton*. Pp. xiv + 218. 15 plates. Cambridge University Press, Macmillan. \$4.50.
- DOUGLAS, C. G. and J. G. PRIESTLEY. *Human Physiology, A Practical Course*. Second edition. Pp. xi + 229. 32 figures. Oxford University Press. \$4.25.
- ERLANGER, JOSEPH and HERBERT S. GASSER. *Electrical Signs of Nervous Activity*. Eldridge Reeves Johnson Foundation Lectures, 1936. Pp. x + 221. 113 figures. University of Pennsylvania Press. \$3.50.
- GAVETT, G. IRVING. *A First Course in Statistical Method*. Second edition. Pp. ix + 400. 74 figures. McGraw-Hill. \$3.50.
- HAYNES, WILLIAMS, Editor. *The Chemical Who's Who; Volume II: 1937*. Pp. 543. The Haynes and George Co., New Haven. \$6.00.
- HIRST, A. W. *Electricity and Magnetism*. Pp. xv + 388. Illustrated. Prentice-Hall. \$4.50.
- HOBGEN, LANCELOT. *Mathematics for the Million*. Pp. xii + 647. 197 figures. Norton. \$3.75.
- LINCOLN, FRANCIS C., WALTER G. MISER and JOSEPH B. CUMMINGS. *The Mining Industry of South Dakota*. Bulletin No. 17, Department of Mining, February, 1937. Pp. 201. 40 figures. South Dakota School of Mines, Rapid City.
- MANSFIELD, WILLIAM. *Materia Medica, Toxicology and Pharmacognosy*. Pp. 707. 202 plates. Mosby. \$6.75.